

Serial No. 09/889,078

RD-25877-9

REMARKS

Applicants appreciate the consideration shown by the Office as evidenced by the Office Action mailed on 2 March 2005. In that Office Action, the Examiner rejected claims 1-11. In this Response, Applicants have amended claims 1, 5, and 7, and cancelled Claim 6. Claims 1-17 remain pending in this application. Applicants respectfully request favorable reconsideration in light of the above amendments and the following remarks.

A. Claim amendments and pending claims

The March 2 office action has been carefully considered. After such consideration claim 1, Claim 5 and Claim 7 are amended and Claim 6 is cancelled. Applicants submit that Claim 1 is amended to include the limitation of claim 6 into claim 1. Claim 1 is amended to include the flux including dissolved calcium metal. Claim 5 is amended to include dissolved oxides in the flux. Claim 6 is cancelled and claim 7 is made dependent on claim 1.

The Examiner appears to have considered only claims 1-11 of the present application. Applicants note that the application includes 17 claims, and that claims 12-17 do not appear to have been addressed in the present Office Action. Applicants respectfully request consideration of these apparently overlooked claims.

B. Claim Rejections

Claims 1-11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Benz ("Benz"), U.S. 5,332,197. For a prima facie case of obviousness, the Examiner must set forth the differences in the claim over the applied reference, set forth the proposed modifications of the reference, which would be necessary to arrive at the claimed subject matter, and explain why the proposed modification would be obvious.

The applicants respectfully traverse these rejections. Claim 1 and the claims depending therefrom are believed to be patentable for the reasons summarized below.

Amended Claim 1 recites a method of removing nitrogen-rich inclusions from a titanium-containing electrode by using a flux comprising dissolved calcium metal. In the present application, for example on page 5, lines 7-9 and on page 6, lines 8-10, the presence of dissolved calcium metal is

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described as playing a role in maintaining low nitrogen partial pressure: "*The calcium metal in the flux helps to provide low partial pressures of nitrogen and oxygen while increasing the conduction of the flux*" and "*The flux may have additional suitable additions, such as dissolved metals and oxides, including calcium metal ...*".

The cited reference fails to teach, suggest, or disclose all of the limitations of the amended independent claim 1. In particular, the reference fails to teach, suggest, or disclose that *the flux comprises dissolved calcium metal*. The Examiner argues that Claim 1 is not patentable as the Benz et al process is equivalent to the claimed process. However, Benz does not disclose the use of molten calcium metal in the flux (slag). Instead, Benz describes that the "*flux contains calcium fluoride or similar fluoride conventionally used with a particular titanium base metal*"col. 6, lines 44-49. Benz teaches the use of calcium fluoride as a slag, with no mention of other materials as being added to the slag. There is no motivation or suggestion in Benz for utilizing dissolved calcium metal in the flux..

In summary, Benz fails to teach, suggest, or disclose the use of flux including dissolved calcium metal in the flux. Benz describes the use of calcium fluoride or any other fluoride flux in electroslog refining of titanium. Benz does not fairly suggest the use of flux including dissolved calcium metal for removing nitrogen-rich inclusions from titanium-containing electrodes as recited in the amended claim 1 of the present application. Applicants thus respectfully submit that claim 1 and its dependent claims 2-5, 7-16, are patentably distinct from Benz. Favorable reconsideration is requested.

Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Benz in view of Curtis et al (hereafter "Curtis"). Applicants respectfully traverse this rejection.

Claim 8 depends from claim 1, which Applicants believe is allowable for the reasons described above. Applicants respectfully submit that claim 8 is allowable over the applied references because it depends from an allowable base claim. Favorable reconsideration is requested.

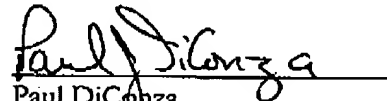
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C. Conclusion

In light of the remarks presented herein, Applicants believe that this serves as a complete response to the subject Office Action. If, however, any issues remain unresolved, the Examiner is invited to telephone the undersigned at the number provided below.

Respectfully submitted,



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